

REMARKS

Claim 1 has been revised to feature an isolated or recombinant protein consisting of SEQ ID NO.:7. Claims 5 and 13 have been revised to feature the isolated or recombinant protein of claims 1 and 2, respectively. Support for these revisions can be found at least in claim 1 prior to the revision, canceled claim 3 and in paragraph [0037] of the specification as published. Claim 2 has been revised the feature the polynucleotide sequence SEQ ID NO:6.

Claim 6 has been revised to use alternative language to encompass the intended subject matter. No narrowing of claim scope is intended or believed to have occurred.

Claims 3, 14 and 16 have been canceled without prejudice for re-presentation of the subject matter of these claims in a continuing application.

Claims 21-23 have been introduced. Support for these claims can be found at least in claim 1 prior to the current revision and paragraph [0035] of the specification as published.

No new matter has introduced, and entry of the above revised claims is respectfully requested.

Alleged rejection under 35 U.S.C. §112, Second Paragraph, Indefiniteness

Claims 3, 7 and 14 are rejected as allegedly indefinite because it is allegedly unclear whether the claimed protein and polynucleotide have the sequence identified in claims 3 and 7, respectively, or if the sequences are merely representative of the claimed protein and nucleotide. Applicants thank the Examiner for the helpful suggestions included with the statement of the rejection. Claim 7 has been revised to feature a gene having the polynucleotide sequence of SEQ ID NO:6. Claims 3 and 14 have been canceled. The above revisions to these claims are believed to address the rejection, and Applicants respectfully submit that the rejections may be properly withdrawn.

Rejection Under 35 USC § 102(b) Over Kim *et al.* (2002)

Claims 1-3, 5, 9, 13, 14 and 20 are rejected under 35 U.S.C. 102(b) as allegedly anticipated by Kim *et al.* (Abstract P21-31, 9th International Symposium on the Genetics of Industrial Microorganisms, 2002) (“Kim Abstract”). Applicants have carefully reviewed the statement of the instant rejection and respectfully submit that no *prima facie* case of anticipation of the claims as revised. Reconsideration and withdrawal thereof are respectfully requested.

As discussed in the previous Response in this matter filed on September 10, 2007, it is well settled that there must be *identity* between the teachings of an asserted document and the claimed subject matter (see for example MPEP 2131 and the case decisions cited therein). The protein disclosed in revised claim 1 is neither anticipated nor suggested by the Kim Abstract.

The Kim Abstract reports an isolated protein having molecular weight of 47 kDa. The protein of claim 1, in contrast, consists of the 443 amino acids of SEQ ID NO.:7. Therefore, with an average molecular weight of 110 Daltons per amino acid (*see, e.g.*, U.S. Patent No. 7,348,423, col. 4, ll. 65-66), the molecular weight of the claimed protein is about 49 kDa. Thus, the protein of the Kim Abstract does not and cannot possess the same material structural characteristics of the protein of claim 1, nor does the Kim Abstract anticipate claims that are directed to SEQ ID NOs: 6 and 7.

Moreover, the protein of the Kim Abstract, having a molecular weight of 47 kDa, is consistent with an active, mature form of the protein *without a signal peptide*. See paragraph [0036] of the specification as filed. The protein of claim 1 as revised, however, is an isolated or recombinant protein consisting of the amino acid sequence of SEQ ID NO:7, which includes a signal peptide and has a molecular weight of 49 kDa (*E. coli*) or 110-160 kDa (*S. cerevisiae*) on SDS PAGE. See Kim et al., *Biotechnol. Lett.* 28: 33-38, 2006 ("Kim Reference"), Fig. 2 on page 36 and page 37, second paragraph.

Further, as shown in the Kim Reference, the recombinant protein of the present invention has different physicochemical and biochemical properties compared with the protein of the Kim Abstract. In particular, the recombinant protein of the instant invention is extensively N-linked glycosylated when produced in *S. cerevisiae*. The N-linked glycosylated recombinant protein has improved thermostability compared with the protein produced from *E. coli*. These physicochemical and biochemical properties are not reported in the Kim Abstract, which also does not enable the recombinant protein of the present invention. To the contrary, Kim *et al.* only reports limited physicochemical and biochemical properties of the reported phytase. Thus, in addition to the structural and functional differences, the skilled person in the relevant field must engage in undue experimentation to enable the claimed subject matter based on the disclosure of Kim *et al.*

In addition, the Kim Abstract neither teaches nor suggests a polynucleotide sequence or a gene encoding the protein. A recombinant protein cannot be produced until the amino acid

sequence or the polynucleotide sequence encoding the protein is understood, and the lack of information with respect to the sequence of the protein in the Kim Abstract argues against its use as an anticipatory reference against the claimed recombinant proteins.

For all of the above reasons, the Kim Abstract does not meet the requirements of a *prima facie* reference for anticipation. Given the structural and functional differences discussed above, and the lack of details in the Kim Abstract, Applicants respectfully request reconsideration and withdrawal of the present rejections.

Conclusion

It is believed that the application is now in condition for allowance. Applicants request the Examiner to issue a notice of Allowance in due course. The Examiner is encouraged to contact the undersigned to further the prosecution of the present invention.

The Commissioner is authorized to charge JHK Law's Deposit Account No. **502486** for any fees required under 37 CFR § 1.16 and 1.17 and to credit any overpayment to said Deposit Account No. **502486**.

Respectfully submitted,

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Dated: April 30, 2008

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